# IEM7110-2G-4D-2C

Embedded Mounting

Multi-service Access Managed Industrial Ethernet Switch Module

- Support 4 serial ports, 2 CAN ports, 8 100M fiber ports or copper ports (optional) and 2 Gigabit fiber ports or copper ports (optional)

- Adopt SW-Ring patented technology, support single ring, coupling ring, chain, Dual-homing, automatic recovery time of network failure < 20ms

- Input voltage: 3.3VDC (±5%)

- Support -40~85℃ wide operating temperature range

# Introduction

IEM7110-2G-4D-2C is a multi-service access managed embedded industrial Ethernet switch module, which has the characteristics of high integration, small size, rich functions, simple and convenient. The product provides 4 serial ports, 2 CAN ports, 8 100M and 2 Gigabit Ethernet ports which can be configured to fiber port or copper port as needed; Using embedded installation mode, users can customize the PCB back plane specifications to choose any Ethernet interface types through the module pins, to meet the needs of different application sites.

Network management system supports various network protocols and industrial standards, such as STP/RSTP, 802.1Q VLAN, QoS, IGMP Static Multicast, Port Trunking, LLDP, Port Mirroring. It also possesses complete management functions, including Port Configuration, Port Statistics, Access Control, Network Diagnosis, Rapid Configuration, Online Upgrading and so on, and supports CLI, WEB, Telnet, SNMP and other access methods. Each serial port or CAN supports 4 TCP or UDP session connections and multiple work modes like TCP Client, TCP Server, UDP, TCP Auto. Network management system could bring you great user experience through its friendly interface design and easy and convenient operation.

Hardware adopts fanless, low power consumption, wide temperature design and has passed rigorous industrial standard tests, which can suit for the industrial scene environment with harsh requirements for EMC. It can be widely used in smart grid, rail transit, smart city, safety city, new energy, intelligent manufacturing and other industrial fields.

# Features and Benefits

- SNMPv1/v2c is used for network management of various levels
- Port mirroring can conduct data analysis and monitoring, which is convenient for online debugging
- QoS supports real-time traffic classification and priority setting
- LLDP can achieve automatic topology discovery, which is convenient for visual management
- File management is convenient for the device rapid configuration and online upgrading
- Bandwidth management can reasonably distribute network bandwidth, preventing unpredictable network status
- Port statistics can be used for the port real time traffic statistics
- User password can conduct user hierarchical management to improve the device management security
- Relay alarm is convenient for troubleshooting of construction site
- VLAN is used for simplifying network planning
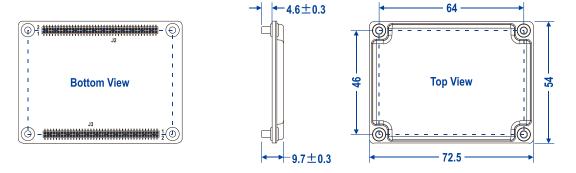- Port Trunking can increase network bandwidth and enhance the reliability of network

connection to achieve optimum bandwidth utilization

⊙ IGMP Snooping and static multicast can be used for filtering multicast traffic to save the network bandwidth

⊙ SW-Ring and STP/RSTP can achieve network redundancy, preventing network storm

⊙ Serial ports support RS-232/RS-485/RS-422 and the baud rate is 300-115,200bps

⊙ CAN port supports 5kbps~1000kbps line-speed non-blocking communication

# Dimension

Unit: mm



# Specification

| Standard & Protocol | IEEE 802.3 for 10Base-T |
|---|---|
| | IEEE 802.3u for 100Base-TX and 100Base-FX |
| | IEEE 802.3z for 1000Base-X |
| | IEEE 802.3ab for 1000Base-T |
| | IEEE 802.3x for Flow Control |
| | IEEE 802.1D for Spanning Tree Protocol |
| | IEEE 802.1w for Rapid Spanning Tree Protocol |
| | IEEE 802.1Q for VLAN |
| | IEEE 802.1p for CoS |
| Management | SNMP v1/v2c Centralized Management of Equipment, Port Mirroring, QoS, LLDP, DHCP Client, File Management, Port Statistics, |
| Security | User Password, Port Alarm, Power Alarm, Threshold Alarm |
| Switch Function | 802.1Q VLAN, Static Port Aggregation, Bandwidth Management, Flow Control |
| Unicast / Multicast | Static Multicast, IGMP-Snooping |

| Redundancy Technology | SW-Ring、STP/RSTP |
|---|---|
| Interface | ●     Ethernet port<br>100M port: 10/100Base-T(X) or 100Base-FX<br>1000M port: 10/100/1000Base-T(X) or 1000Base-X<br><br>●     Serial port<br>Interface quantity: 4<br>RS-485 signal: D+, D-, GND<br>RS-232 signal: DSR, RXD, RTS, TXD, CTS, DTR<br>RS-422 signal: T+, T-, R+, R-, GND<br>Baud rate: 300~115200bps<br>Data bit: 5bit, 6bit, 7bit, 8bit<br>Parity bit: None, Even, Odd, Space, Mark<br>Stop bit: 1bit, 1.5bit, 2bit<br>Directional control: RS-485 adopts Automatic Data Direction Control technology<br>Load capacity: RS-485 supports 32-point polling (customizable 128 points)<br><br>●     CAN Port<br>Interface quantity: 2<br>CAN signals: CAN+, GND, CAN-<br>Protocol support:CAN2.0A, CAN2.0B<br>Work mode: normal, self-test, listen only<br>Work pattern: two-wire half duplex<br>Baud rate: 5kbps~1000kbps<br>Load capacity: support concurrent transmitting of 110 nodes<br><br>●     Console port<br>TTL level serial data<br><br>●     Alarm interface<br>Support 2 alarm information input/output IO ports |
| Switch Property | Transmission mode: store and forward<br>100M forwarding speed: 148810pps<br>Gigabit forwarding speed: 1488100pps<br>MAC address: 8K<br>Buffer: 1Mbit<br>Backplane bandwidth: 7.6G<br>Switch time delay: <10μs |
| Power Supply | 3.3VDC (±5%) |

| Power Consumption | < 3W |
|---|---|
| Working Environment | Operating temperature: -40~85℃<br>Storage temperature:-40~85℃<br>Relative humidity: 5% ~ 95% (no condensation) |
| Physical Characteristic | Installation: embedded mounting<br>Dimension (W x H x D): 72mm×9.7mm×54mm |
| Authentication | CE, FCC, RoHS |
| Warranty | 5 years |

# Ordering Information

| Available Models | Serial Port | CAN Port | Gigabit Port (Optional Fiber/Copper Port) | 100M Port (Optional Fiber/Copper Port) | Power Supply |
|---|---|---|---|---|---|
| IEM7110-2G-4D-2C | 4 | 2 | 2 | 8 | 3.3VDC (±5%) |

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